```
RESULT 5
US-09-877-476-16
                                                                                                                                             475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      용
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ઠે
                                                              g
                                                                                                         ð
                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                   ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKLLEPYTEMGKKLFKDKIKHYYPDFKLAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NTNVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DLIHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        115 GTCDDSSWLDFLRKIQERSGLGDETHGFEGLLQVPPRKTFAAAREFTEQVIGALENLFK 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE 180
                                                                             235 DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYB 294
                                                                                                                             LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS 240
                                                                                                                                                               354
                                                                                                                                                                                                   241 EKLLPFVTPMGKKLPKDKIKHYYVPDFKLAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA 300
                                                                                                                                                                                                                      301 SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 360
                                                                                                                                                                                                                                                                                             415 SRSTLHRFGNTSSSSIWYELAYIEAKGRWKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GTCDDSSWLDFLRKIQERSGLGDETHGPEGLLOVPPRKTFAAAREETEQVIIGALENLFK
                                                                                                                                              295 LVHTVRIHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRIVKKNIATLGPLILPLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OTHER INFORMATION: 5' 114 amino acids from A. thaliana FAEI (SEQ ID OTHER INFORMATION: NO:2) and 3' 392 amino acids from B. napus OTHER INFORMATION: elongase KCS (SEQ ID NO:4), having a mutation at OTHER INFORMATION: position 92; designated At114 K92R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: JANCARIAN, Jan G.
APPLICANT: Blacklock, Brenda J.
APPLICANT: Blacklock, Brenda J.
APPLICANT: Blacklock, Brenda J.
TITLE OF INVENTION: PAITY ACID ELONGASE 3-KETOACYL COA TITLE OF INVENTION: SYNTHASE POLYPEPTIDES
FILE REFERENCE: 07148-108001
CURRENT PELLICATION NUMBER: US/09/877,476
CURRENT PELLOR DATE: 2001-06-08
PRIOR APPLICATION NUMBER: US/0/210,326
TUPBER OF SEQ ID NOS: SEG
SOFTWARE: FRACESCO for Windows Version 4.0
SEQ ID NO 14;
LENGTH: 506
TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 2031; DB 2;
Pred. No. 1.5e-209;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                  361 TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 392
                                                                                                                                                                                                                                                                                                                                                                       475 TINSPWEHCIDRYPVKIDSDSGKSETRVQNGRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Application US/09877476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 99.7%;
Matches 391; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 3
US-09-877-476-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             241
                                                                                                                               181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ઠે
                                                          ઠે
                                                                                  셤
                                                                                                                             ò
                                                                                                                                                            셤
                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                            ઠે
                                                                                                                                                                                                                                                                                                              유
                                                                                                                                                                                                                                                                                                                                                    ઠે
```

```
300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 NINVNPKDIGILVVNSSMENPTFSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                121 DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRSKYE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     294 LVHTVRTHTGADDKSFRCVQQGDDRNGKIGVSLSKDITDVAGRIVKKNIATLGPLILPLS 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               414 SRSTLHRFGNTSSSSIMYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 473
355 EKILFFVTFWGKKLFKDKIKHYYVPDFKCAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA 414
                                                                                                       474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 EKLLFFVTFMGKKLFKDKIKHYYVPDFKLAIDHFCIHAGGRAVIDVLBKNLALAPIDVBA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 SRSTLHRFGNTSSSSIWYELAYIEAKGRWKKGNKVWQIALGSGFKCNSAVWVALMNVKAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GTCDDSSWLDFLRKIQERSGLGDETHGPEGLLQVPPRKTFAAAREETEQVIIGALENLFK
                                                           SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALANNVKAS
                                                                                       TYPE: PRI
ORGANISM: Artificial Sequence
ORGANISM: EATURE:
OTHER INFORMATION: 5' 74 amino acids from A. thaliana FAE1 (SEQ ID
OTHER INFORMATION: NO:2) and 3' 431 amino acids from B. napus
OTHER INFORMATION: elongase KCS (SEQ ID NO:4) having a mutation at
OTHER INFORMATION: residue 306; designated At74 G306D; hypothetical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 99.7%; Pred. No. 1.9e-209;
Matches 391; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                361 TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 392
                                                                                                                                                                361 TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 392
                                                                                                                                                                                                 TNSPWEHCIDRYPVKIDSDSGKSETRVPNGRS 506
                                                                                                                                                                                                                                                                                                                                      SQUENCE 18, Application US/09877476

Patent No. 671364

GENERAL INPORMATION:
GENERAL INPORMATION:
APPLICANT: Blacklock, Brenda J.
TITLE OF INVENTION: FATTY ACID ELONGASE 3-KETTILE OF INVENTION: PATTY ACID ELONGASE 3-KETTILE OF INVENTION: SYNTHASE POLYPEPTIDES
TITLE OF INVENTION: SYNTHASE POLYPEPTIDES
TITLE OF INVENTION: SYNTHASE POLYPEPTIDES
THER REPERRINGE: 07148-108001
CURRENT FILING DATE: 2001-06-08
NUMBER FILING DATE: 2000-06-08
NUMBER OF SEQ ID NOS: 56
SEQ ID NO 18
LENGTH: 505
                                                                                                                                                                                                                                                                                                   RESULT 4
US-09-877-476-18
```

fr.

```
301 SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 360
                                                                                                                                                                                                                                                                                                                                                       Soguence 12, Appli
Patent No. 6713664
                                                                                                                                                                                                                                                                                                                     RESULT 9
US-09-877-476-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-877-476-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              235
       121
                                                                  181
                                                                                                                             241
                                                                                                                                                                                     301
                                                                                                                                                                                                                  415
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8
                              셤
                                                                  Š
                                                                                      셤
                                                                                                                    ઠે
                                                                                                                                                      유
                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ઠે
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                     ò
                                                                                                                                                                        180
                                                                                                                                                                                                                                  240
                                                                                                                                                                                                                                                                                           300
                                                                                                                                                                                                                                                                                                                       414
                                                                                                                                         234
                                                                                                                                                                                                                                                            354
                                                                                                                                                                                                                                                                                                                                                      SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 360
                                                                                                                                                                                                                                                                                                                                                                    415 SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVXAS 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 NTNVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     175 NINVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGGGGCSAGVIAIDLAK 234
                                                                                                            NTNVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                   294
                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9
                                                                                                                             295 LVHTVRTHTGADDKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLIPLS
                                                                                                                                                                                                                                                                                                          355 EKLLPPVTFMGKKLPKDKIKHYYVPDFKLAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA
                                                                                                                                                                       DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE
                                                                                                                                                                                                   235 DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE
                                                                                                                                                                                                                                                                                         EKLLFFVTFMGKKLFKDKIKHYYVPDFKLAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GTCDDSSWLDFLRKIQERSGLGDETHGPEGLLQVPPRKTFAAARBETEQVIIGALENLFK
                                                   1 GTCDDSSWLDFLRKIQERSGLGDETHGPEGLLQVPPRKTFAAAREETEQVIIGALENLFK
                                                                                                                                                                                                                                LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ü
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURE:
| NAME/KEX: VARIANT | LOCATION: ()...(0) | OTHER INFORWATION: Xaa = Ala or Thr | OTHER INFORWATION: 5' 114 amino acids from A. thaliana FAEI (SEQ | OTHER INFORWATION: NO:2) and 3' 392 amino acids from B. napus | OTHER INFORWATION: elongase KCS (SEQ ID NO:4); designated Atil4 US-09-877-476-8
                       ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 506;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Indels
                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 8, Application US/09877476

Sequence 8, Application US/09877476

Patent No. 6713664

GENERAL INFORMATION:

APPLICANT: Jaworski, Jan G.

APPLICANT: Blacklock, Brenda J.

TITLE OF INVENTION: SYNTHASE POLYBEPTIDES

TITLE OF INVENTION: SYNTHASE POLYBEPTIDES

FILE REFERENCE: 07148-108001

CURRENT FILING DATE: 2001-06-08

PRIOR PLING DATE: 2001-06-08

PRIOR PLING DATE: 2000-06-08

NUMBER OF SEQ ID NOS: 56

SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 2027; DB 2;
Pred. No. 4.1e-209;
0; Mismatches 2;
         Pred. No. 1.9e-209;
                                                                                                                                                                                                                                                                                                                                                                                                                                  475 TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 506
                                                                                                                                                                                                                                                                                                                                                                                                                 INSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 392
99.7%; Pre-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 390; Conservative
                     Conservative
       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-877-476-8
                                                                                                            61
                                                                                                                                                                        121
                                                                                                                                                                                                                                181
                                                                                                                                                                                                                                                                                           241
                                                                                                                                                                                                                                                                                                                                                      301
                                                                                                                                                                                                                                                                                                                                                                                                                 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQ ID NO 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local (
         Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                       g
                                                                                                            ð
                                                                                                                                      g
                                                                                                                                                                                                셤
                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                            뭐
                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                   ŝ
                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                           ठ
                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ઠે
```

```
ö
                                                                                                                                                                                                                                          300
                                                                                                                                                                                                                                                                                                      414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NTNVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         234
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               241 EKLLFFVTFMGKKLFKDKIKHYYVPDFKLAIDHFCIHAGGRAVIDVLEKNLALAPIDVBA 300
                               235 DLLHVKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKXE 294
                                                                                                                                                                               354
                                                                                                                                                                                                                                                                                                                                                                 SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALMNVKAS 360
                                                                                                                                                                                                                                                                                                                                                                                                SRSTLHRFGNTSSSSSIWYELAYIEXKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  115 GTCDNSSWLDFLRKIQERSGLGDETHGPEGLLQVPPRKTFAAAREETEQVIIGALENLFK 174
                                                                                                                                                      295 LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                                                                                                                                                                                                                                                                         175 NINVNPKDIGILVVNSSMFNPTPSI,SAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DLLHVHRNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          295 LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DLLHVHKNTYALVVSTENI TYNI YAGDNRSMMVSNCLFRVGGAAI LLSNKPGDRRRSKYE
                                                                                                                                                                                                                                          EKCLFFVTFMGKKLFKDKIKHYYVPDFKCAIDHFCIHAGGRAVIDVLEKNLALAPIDVEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DILHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LVHTVRTHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                                                                                                                      LVHTVRIHTGADGKSFRCVQQGDDENGKIGVSLSKDITDVAGRTVKKNIATLGPLILPLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GTCDDSSWLDFLRKIQERSGLGDETHGPEGLLQVPPRKTFAAAREETEQVIIGALENLFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OTHER INFORMATION: 5' 114 amino acids from A. thaliana FAEI (SEQ ID OTHER INFORMATION: NO:2) and 3' 392 amino acids from B. napus OTHER INFORMATION: elongase KCS (SEQ ID NO:4) having mutations at OTHER INFORMATION: residues 91 and 92; designated At114 L91C K92R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 506,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Jaworski, Jan G.
APPLICANT: Blacklock, Brenda J.
APPLICANT: Blacklock, Brenda J.
TITLE OF INVENTION: FAITY ACID ELONGASE 3-KETOACYL COA
TITLE OF INVENTION: FAITY ACID ELONGASE 3-KETOACYL COA
TITLE OF INVENTION: SYNTHASE POLYPEPTIDES
FILE REFERENCE: 07148-108001
CURRENT FILING DATE: 2001-06-08
PRIOR APPLICATION NUMBER: US 60/210,326
PRIOR APPLICATION NUMBER: US 60/210,326
PRIOR APPLICATION NUMBER: US 60/210,326
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 12
LENGTH: 506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 99.5%; Score 2026; DB 2;
Best Local Similarity 99.5%; Pred. No. 5.2e-209;
Matches 390; Conservative 1; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        361 TNSPWEHCIDRYPVKIDSDSGKSETRVQNGRS 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TINSPWEHCIDRYPVKIDSDSGKSETRVPNGRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Application US/09877476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Artificial Sequence
```

ğ

ಗ್ಗ

NERAL INFORMATION:

LT 10 9-877-476-20

61

241

```
DLLHVHKNTYALVVSTENITYNIYAGDNRSMMVSNCLFRVGGAAILLSNKPGDRRRSKYE 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             294 LVHTVRIHITGADDKSFRCVQQGDDENGQTGVSLSKDITDVAGRIVKGNIATLGPLILPLS 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         301 SRSTLHRFGNTSSSSIWYELAYIEAKGRMKKGNKVWQIALGSGFKCNSAVWVALNNVKAS 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            61 NINVNPKDIGILVVNSSMFNPTPSLSAMVVNTFKLRSNVRSFNLGGMGCSAGVIAIDLAK 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LVHTVRTHTGADGKSFRCVQQGDDBNGKIGVSLSKDITDVAGRTVKKVIATLGPLILPLS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXILEFVIFMGKKI.FKDKIKHYYVPDFKI.AIDHFCIHAGGRAVIDVLEKNLALAPIDVEA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GTCDDSSWLDFLRKIQERSGLGDETHGFEGLLQVPPRKTFAAAREETEQVIIGALENLFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     114 GrcbbsswidfikkigersglobethGregilQvPPRKTFARAREETEQvIIGALENLFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OKGANISM: Artificial Sequence
FEATURE:
OTHER INFORMATION: 5' 399 amino acida from B. napus elongase KCS (SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                  Length 505;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
         APPLICANT: Jaworski, Jan G.
APPLICANT: Jaworski, Jan G.
APPLICANT: Blacklock, Brenda J.
TITLE OF INVENTION: FATTY ACID ELONGASE 3-KETOACYL COATTILE OF INVENTION: STWINASE POLVPEPTIDES
FILE REFERENCE: 07148-108001
CURRENT PAPLICATION NUMBER: US/09/877,476
CURRENT PLING DATE: 2001-06-08
PRIOR FILING DATE: 2000-06-08
NUMBER OF SEQ ID NOS: 56
SOFTWARE: FASELSEQ for Mindows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Jaworski, Jan G.
APPLICANT: Blacklock, Brenda J.
TITLE OF INVENTION: FATTY ACID ELONGASE 3-KETOACYL COA
TITLE OF INVENTION: SYNTHASE POLYBEPTIDES
FILE REPRENCE: 07149-108001
CURRENT APPLICATION NUMBER: US/09/877,476
CURRENT FILING DATE: 2001-06-08
PRIOR FILING DATE: 2000-06-08
                                                                                                                                                                                                                                                                                                                                                                                                                  Score 1986; DB 2;
Pred. No. 1.1e-204;
3; Mismatches 7;
SENERAL INFORMATION
```

29 12: 325

ö

75 99

300